

the male element is found is uniformly termed an *antheridium*; the ciliated fecundating bodies are termed *antherozoids*, those destitute of vibratile cilia *pollinoids*.

For the unfertilized female protoplasmic mass, it is proposed to retain the term *oosphere* and to establish from it a corresponding series of terms ending in *sphere*. The authors propose the syllable *sperm* as the basis of the various terms applied to all those bodies which are the immediate result of impregnation. The entire female organ before fertilization, whether unicellular or multicellular, is designated by a set of terms ending in *gonium*.

The following table exhibits concisely the proposed system in the different classes of Cryptogams:

I. ZYGOSPERMEÆ. *Zygonium* containing *Zygosphere*, fertilized *ZygospERM*.

II. OOSPERMEÆ. Male organ, *Antheridium* containing *Antherozoids* or *Pollinoids*.

Female organ, *Oogonium*, containing *Oosphere*, fertilized *Oosperm*.

III. CARPOSPERMEÆ. Male organ, *Antheridium* containing *Antherozoids* or *Pollinoids*.

Female organ, *Carpogonium* containing *Carposphere*, fertilized *Carposperm*.

IV. CORMOPHYTA. Male organ, *Antheridium*, containing *Antherozoids*.

Female organ, *Archegonium* containing *Archisphere*, fertilized *Archisperm*.

In the CARPOPHYCEÆ the process is complicated, being effected by means of a special female organ which may be called the *trichogonium*; the ultimate result of impregnation is a mass of tissue known as the *cystocarp*, within which are produced the germinating bodies which must be designated *carpospores*. Any one of these impregnated bodies which remains in a dormant condition for a time before germinating is a *hypnosperm*.

In the *Basidiomycetes*, *Ascomycetes* and some other classes, it is proposed to substitute the term *fructification* for "receptacle" for the entire non-sexual generation which bears the spores.—A. P. MORGAN.

NEW SPECIES OF FUNGI FOUND IN MARYLAND.—AGARICUS (TRICHOLOMA) CELLARIS.—Pileus convex, obtuse, then expanded, fleshy in the center, thin at the margin, silky, smooth, dry, white, more or less stained with umber at the disk; margin sometimes flexuous; lamellæ white, close but not crowded, adnexed, narrow, forked; stipe white, smooth, stuffed with cottony threads, equal, variously branched; spores white, .00024 by .0003 inches; odor and taste pleasant.

Plant five or six inches high, pileus three or four inches broad, stipe one inch thick; cæspitose.

I found this plant in Baltimore, on the fourth of October, growing on a brick wall in a dark cellar. The entire bunch measured more than one-half yard in diameter, and contained twenty-three pilei.

AGARICUS (TRICHOLOMA) BROWNEI. — Pileus convex, then plane, dry, fleshy, densely furfuraceous, ochraceous-brown, looking like soft kid or leather after the bran-like particles fall off; margin striate all the way round, then only at intervals, flesh white, solid, unchanging; lamellæ adnate, forked, not distant, at first pale yellow turning darker in age; stipe hollow or stuffed, squamose, bulbous, penetrating deeply into the earth by a fusiform root; spores white, globose, .00032 inches in diameter; taste slightly saline, but not disagreeable.

Plant ten inches high, pileus seven or eight inches broad, stipe eight lines thick.

In woods near Baltimore, July and August.

It gives me pleasure to dedicate this remarkably beautiful Agaric to its discoverer, Mr. Wm. Hand Browne.

RUSSULA CINNAMOMEA. — Pileus dry, fleshy, centrally depressed, cinnamon color, rimoso-squamose, flesh dry, spongy, tinged with ochre; lamellæ concolorous, narrow, forked, close, sinuate near the margin; stipe regular, smooth, pallid, blunt, at first stuffed, then hollow; spores globose, .00032 inches in diameter; taste acrid.

Plant two or three inches high, pileus four to six inches broad, stipe one inch thick.

In woods near Baltimore, June and July.

RUSSULA VARIATA. — Pileus at first globose, then expanded and centrally depressed, smooth, viscid, variable in color and even variegated. brownish or pinkish-purple, with at times a cast of green, epidermis peels easily, the extreme under margin edged with a delicate line of purple, flesh white, unchanging; lamellæ white, adnexed, narrow, forked, close; stipe white, smooth, more or less tapering at the base, spongy within; spores white, echinulate, .0003 by .0003 inches; taste acrid.

Plant nearly two inches high, pileus three or four inches broad, stipe nine lines thick.

In woods near Baltimore, July. — M. E. BANNING.

BACTERIA THE CAUSE OF BLIGHT. — Recently the writer had the pleasure of hearing a lecture by Prof. T. J. Burrill, Botanist of the Illinois State Board of Agriculture, in which he gave some results of his recent investigations into the cause of Pear Blight. In diseased trees he found the cell sap swarming with *bacteria*, multiplying usually at the expense of the starch contents, accompanied of course by an evolution of CO₂. To test the matter Prof. Burrill inoculated several healthy trees by means of an inoculating needle and in the great majority of cases, within 7 or 8 days the subject would begin to show signs of the Blight.

RECENT PUBLICATIONS. — *The American Journal of Science.* — The December number is mostly made up of a General Index to Vols. XI–XX of the Third Series. During Dr. Gray's absence the Botanical department is conspicuous by its absence.

The American Naturalist. — In the December number the depart-

ment of Botany appears under the editorial management of Prof. C. E. Bessey. The editors of the *Naturalist* could not have selected more wisely, and we congratulate them upon securing the services of one who will put new and vigorous life into a department too long neglected. A dispermous acorn is described and figured by Prof. Bailey.

Bulletin of the Torrey Botanical Club.—In the November number a *Laminaria*, new to the U. S., is described. Mr. W. R. Gerard describes and figures a viviparous specimen of *Phleum pratense*.

The American Microscopical Journal.—This journal announces a change of type for 1881, which will allow it to put more matter in the same space. We are glad to learn that the editor was so successful during the past year as to encourage him to continue the publication of so valuable a periodical.

The Gardener's Monthly and Horticulturist.—We always turn over the pages of this magazine with the wonder how any one in this country interested in Horticulture can get along without it. It is crowded so full of seasonable hints, editorial notes, science and travel, reports from societies, and first class advertisements, that it is a perfect mine of information to the gardener and horticulturist.

Case's Botanical Index.—This claims to be the cheapest horticultural paper in the world. For 50 cents a year it is mailed to subscribers quarterly. It is handsomely printed and illustrated and gives much that is of interest to all classes of botanists.

Vick's Illustrated Monthly Magazine.—The December number contains a very handsome frontispiece, giving on a blue background a picture of a plume of Pampas grass. For hints as to decoration of house or lawn, we know nothing better than this magazine. Many a dreary yard has been beautified by following the simple directions given by Mr. Vick.

The Floras of Cincinnati.—Mr. Davis L. James gives us in this pamphlet a sketch of the Floras of Cincinnati published from 1815 to 1879. It seems that in this time four floras have been published. Mr. Joseph F. James' is the most recent one, and in the present pamphlet quite a number of additions and corrections are made to it. The additions consist of 19 new species and 16 new identifications, principally the work of Mr. C. G. Lloyd, Curator of Botany in the Cincinnati Society of Natural History.

Sexual Variation in Castanea Americana.—This paper, by Mr. Isaac C. Martindale, is a reprint from the last *Proc. Phil. Acad.* It describes among other things a case in which male flowers had become female and produced an abundance of burs. It is sometimes argued that want of nutrition produces such a result, but this Mr. Martindale does not accept.

Erie Natural History Society.—A neat pamphlet of about 30 pages comes to hand, bearing the above title. A glance through its pages shows the President of the society to be a good botanist, G. Guttenberg. A history of the society is given and some of its papers published, among which is a very interesting one from Mr. Guttenberg upon the "Poisonous Plants which grow in and around Erie."